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Patent claims

1. An internal high pressure forming installation with a forming tool which contains an upper die and a lower die which, with their cavity, form the forming chamber for a peripherally closed hollow profile to be inserted therein, at least one axial punch by means of which the inserted hollow profile can be sealed at one end and which has an axial through channel via which an internal high pressure can be produced with a pressurized fluid in the hollow profile in order to expand it, and with a rapid filling device which has a filling attachment with a filling bore, the diameter of which is larger than that of the through channel of the axial punch and via which the hollow profile can be filled with pressurized fluid in a position of the axial punch in which it is drawn back from the respective hollow profile end, the filling attachment having a through bore through which the axial punch protrudes during the forming process of the hollow profile, characterized in that the filling attachment (12, 27) is connected to a transporting device which brings the filling attachment (12, 27) into a contact position on the forming tool (2) in order to fill it and, after the filling, guides it into a position remote from the forming tool.

2. The internal high pressure forming installation as claimed in claim 1, characterized in that the axial punch (8) forms the transporting device, the filling attachment (12, 27) being arranged on the axial punch (8) in a manner such that it can be displaced relative to the latter in the axial direction.

3. The internal high pressure forming installation as claimed in either of claims 1 and 2, characterized in that the filling attachment (12, 27) is designed in the manner of a bell.

4. The internal high pressure forming installation as claimed in either of claims 2 and 3, characterized in that the axial punch (12) has a stop (21) in the vicinity of the forming tool, and in that the installation (1) contains a device by means of which the rigid filling attachment (12) is held on the forming tool (2) during the filling.

5. The internal high pressure forming installation as claimed in claim 4, characterized in that the device is a compression spring (22) by means of which the rigid filling attachment (12) is supported on the outside on a radially outwardly situated step (24) of the axial punch (8).

6. The internal high pressure forming installation as claimed in one of claims 2 to 5, characterized in that an encircling seal (18) is arranged on the end side (17) of the filling attachment (12), which end side faces the forming tool (2).

7. The internal high pressure forming installation as claimed in either of claims 2 and 3, characterized in that the filling attachment is a flexible bellows (27) which is fastened to the axial punch (8) in the region of the through bore (14).

8. The internal high pressure forming installation as claimed in one of claims 1 to 7, characterized in that the filling attachment (12, 27) has a vent bore (19).

9. The internal high pressure forming installation as claimed in one of claims 1 to 8, characterized in that the filling attachment (12, 27) has an outlet bore (20).